REVIEWS OF RECENT LITERATURE.

History of the Smithsonian Institution.[1] — The Smithsonian Institution has been so intimately associated with the progress of natural science in the United States during the last fifty years that its history is a sort of epitome of the activities of American naturalists during that period.

It originated in a bequest of James Smithson, of England, who, dying in 1829, left his property to his nephew with the provision that, in case he died without heirs, it should go "to the United States of America, to found at Washington, under the name of the Smithsonian Institution, an establishment for the increase and diffusion of knowledge among men." His nephew dying soon after, the property, amounting to over $500,000, was paid to the government, which guaranteed forever to the institution interest at the rate of six per cent on the original sum, together with all savings and gifts added to it, to the amount of $1,000,000. The total principal is now over $900,000.

The bequest being without precedent, a protracted discussion occurred as to the best way to use the fund. A university, an astronomical observatory, an agricultural experiment station, and a meteorological bureau were urged by different persons. At about this time a society called the National Institute was organized at Washington, rapidly gained a national reputation, and made great, but vain, efforts to get Congress to unite the Smithsonian Institution with it. The opposition of Congress led to the quick decay of this society, but it, more than anything else, determined the character of the Smithsonian Institution when, in 1846, it was finally established.

The character of an institution is often determined more by its earliest executive than by its statutes. The pride American men of science take in the "Smithsonian" is largely due to what Joseph Henry was and what he made it during its first thirty-one years. The particular interest that naturalists feel in the institution is largely due to the second secretary, the zoologist Baird, who admirably complemented the work of Henry.

[1] *The Smithsonian Institution, 1846–96. The History of its First Half-Century.* Edited by George Brown Goode. Washington, 1897. 856 pp.

In considering the special lines of work of the institution most interesting to naturalists, we may refer briefly to the National Museum, the Bureau of Ethnology, the Exchange System, the Zoological Park, and Explorations.

The museum was a cherished feature of the "National Institute." It had been given charge of the collection of the Wilkes' Expedition, 1838, and when it broke up, this collection and the others it possessed passed to the Smithsonian Institution. The exploration of the Territories and donations from foreign governments and from travelers soon swelled the collections enormously, so that now a special congressional appropriation of over $180,000 per annum is required to maintain them.

The Bureau of Ethnology, which had its germ in Major Powell's explorations of the canyons of the Colorado and of this whole river basin, 1867–69, and had passed an embryonic existence under the "Geographical and Geological Survey of the Territories," was born as a distinct bureau when the Geological Surveys were reorganized in 1879.

The System of International Exchanges was proposed by Henry, 1847, in his original plan of organization. Originally it related only to the exchange of government publications; but later the service was extended to the international exchange of publications between scientific societies or between societies and individuals. This work has grown so that it now requires a special congressional appropriation of $17,000 per annum.

The National Zoological Park, which originated over ten years ago in Secretary Langley's desire that the National Museum should possess living animals, now includes 166 acres in the suburbs of Washington. While the great expense of its maintenance precludes its rapid growth, it is believed to be already an important safeguard against the utter extinction of several species of mammals.

As for explorations, the Smithsonian Institution has coöperated in all those of the government since 1846 and has granted subsidies to some private ones. The decade preceding 1856 was very fertile in government surveys. Among these may be mentioned the survey of Wisconsin, Iowa, Minnesota, etc., by Owen, of the Lake Superior region by Jackson and Whitney, of Oregon by Evans; the survey of the boundary between the United States and Mexico, and later of the Gadsen Purchase; the Pacific Railroad surveys along the 47th parallel, the 41st parallel, the 38th and 39th parallels, the 35th parallel, the 32d parallel, in California, and in Northern California

and Oregon; explorations of the Red River, the Great Salt Lake, the Upper Missouri and Yellowstone, and the survey of the Indian Territory; naval expeditions to Chile, Japan (Perry), the China seas and Bering's Strait, La Plata and its tributaries (Page), the west coast of Greenland and Smith's Sound (Kane). Later, under Baird, the institution coöperated with the marine explorations of the Fish Commission. Among private explorations aided were those of the American Antiquarian Society of Worcester, Mass., among Ohio mounds, 1851; of Samuels in California, 1855; of Kennicott in British America and Alaska; of Dall in Alaska; of Scott in Yucatan; of Berendt in British Honduras, 1865; of Orton in northern South America, 1867; of Simson in Utah, 1859; of Stejneger at the Commander Islands, 1882; of Jouy in Corea, 1883; of Rockhill in Mongolia and Thibet, 1888–89, 1891–92. Such explorations have affected not only science, but commerce.

Finally, a few words may be said about the work done in the publication of zoological and botanical investigations alone. Among zoological works we notice Scudder's *Nomenclator Zoologicus;* numerous works on zoogeography; descriptive, monographic, and faunistic works, issued either as separate "Contributions" or in the *Proceedings of the U. S. National Museum;* and a few physiological memoirs.

To these may be added valuable reports on *The Progress of Zoology, 1879–86*, and *Instructions for Collectors*. Among botanical works are the results of Wright's explorations in Texas; several expensive monographs by Torrey and by Gray, especially Gray's *Synoptical Flora of North America*, Harvey's *Marine Algæ of the United States*, Wood's *Fresh-Water Algæ*, and Leidy's *Fauna and Flora within Living Animals*.

This brief review of some of the chapters of the history which lies before us inadequately indicates its scope and value. The volume was planned and partly carried to consummation by the late Dr. G. Brown Goode. The reading of the book impresses one strongly with the single-mindedness of those who have been chiefly concerned in the management of the Smithsonian Institution. C. B. D.

Proceedings of the Indiana Academy of Science. — The volume of the *Proceedings of the Indiana Academy of Science for 1896*, dated 1897, did not reach our hands until the last of January, 1898. The volume is a larger one than its predecessors, and, like them, is an example of printing done at state expense, — a pretty poor example of typographic art. Another fault we have to find with the